Interstate Telecommunications
Cooperative, Inc.
P.O. Box 920
3I2 4th Street West
Clear Lake, South Dakota 57226

INTERSTATE TELECOMMUNICATIONS COOPERATIVE, INC.

Phone: 605.874.2181 I.800.417.8667 Fax: 605.874.2014 E-mail: info@itctel.com www.itc-web.com

October 14, 2004

Chairman Larry B. Hartman Minnesota Environmental Quality Board 658 Cedar Street Room 300 St. Paul, Minnesota 55155

RE: Xcel Application

Dear Chairman Hartman:

Interstate Telecommunications Cooperative, Inc. (ITC), of Clear Lake, South Dakota, is concerned about the installation of a proposed 115kV transmission line and associated facilities by Xcel which will connect the Buffalo Ridge Substation in Lincoln County, Minnesota, to the White Substation in Brookings County, South Dakota. The proposed 115kV transmission line and associated facilities are to be installed and operated within an exchange of ITC.

ITC believes the proposed transmission line will interfere with the telecommunication services offered by ITC to its customers, because the proposed Xcel transmission line system is to be located along the same right-of-way as the telecommunications system presently in place for ITC and currently serving the cooperative's customers. Accordingly, the primary purpose of this letter is to advise the Environmental Quality Board that if the design of the wind plant collector system and related power system to be installed and operated by Xcel is not coordinated closely with the existing ITC telecommunications system, then the services provided by ITC to its customers will probably be disrupted by interference. Indeed, the customers of ITC located in and around Lake Benton, Minnesota, have reported either interference or noise disrupting their telephone services whenever there is wind collected by the current Xcel transmission line system. The current wind plant collection system was installed without any coordination by Xcel with ITC, and the interference or noise currently caused by the harvested wind remains a current problem for ITC customers in the area of Lake Benton, Minnesota.

The institute of electronic and electrical engineers has developed standards that directly address noise induced by power systems onto telecommunication systems. These standards measure, predict and provide potential remedies for these interference issues provided both the power company and telecommunication company apply these standards <u>before</u> the power systems are designed and installed.

EXHIBIT 23 MEQB Docket 04-84-TR-Xcel

Background:

The basic building block for telephony transmission is the voice channel. "Voice Channel" is defined as the transmission path for voice communication over coaxial cable, radio, wire, or over a fiber optic system. The primary concern in the case of "potential interference" is noise induced from <u>collector power systems</u> interconnected to <u>wind turbines</u> and routed along the same right-of-way as the <u>copper conductors</u> of the telecommunications system. ITC is concerned that service to its customers may be interrupted due to interference from the power system by Xcel that is to be located along the same right-of-way as ITC's telecommunications system. Please understand that the power system's conductors do not necessarily have to be located along the same right-of-way, but rather, need only be parallel and in close proximity to the telecommunication's conductors.

The institute of electrical and electronic engineers (IEEE) has prepared a standard that predicts, identifies and measures potential sources of interference from power systems onto telecommunication systems. This standard is called IEEE 776. Standard IEEE 776 is "the recommended practice for inductive coordination of electric supply and communication lines". IEEE 776 states that "[T]his recommended practice addresses the inductive environment that exists in the vicinity of electric power and wire-line telecommunications systems and the interfering effect that may be produced thereby; guidance is offered for the control or modification of the environment and the susceptibility of the affected systems in order to maintain an acceptable level of interference." The concept of an interface is developed to aid the user of this recommended practice in calculating induction between power and telecommunication lines. Also, engineers can predict the level of interference that may be produced before the transmission line is installed. Furthermore, this recommended practice permits either party to verify the induction at the interface by use of a probe wire after the transmission line has been installed.

Inductive interference is defined as an effect arising from the characteristics and inductive relations of electric supply and telecommunication systems. The interference is of such character and magnitude that it will prevent the telecommunication circuits from rendering service economically and satisfactorily if methods of inductive coordination were not applied. Inductive interference is produced by the simultaneous coexistence of the following three factors:

- a) an inductive influence;
- b) a coupling mechanism between two electrical systems or circuits of which one produces the influence; and
- c) a susceptibility of the second system or circuit to interference.

Inductive interference may generally occur at any time if the above conditions are met, but the majority of cases and the principal concern of this recommended practice involves interference in telecommunication systems as a result of their proximity to electric power systems. Accordingly, subsequent discussion is limited to that general case, although the principles and practices may apply to other cases as well.

Conclusion:

If the standard IEEE 776 is required in any permit issued by the Environmental Quality Board <u>and</u> Xcel closely coordinates its design of the wind facility with the telecommunications system of ITC, then inductive interference may be avoided. Standard IEEE 776 gives explicit guidance to avoid such interference. Furthermore, ITC would like to review and work with Xcel to avoid potential inductive interference by applying standard IEEE 776, plus other related IEEE standards.

Please feel free to contact me at 605-874-8308 if you have any comments or questions regarding the contents of this letter.

Sincerely,

Interstate Telecommunications Cooperative, Inc.

Jerry Heiberger General Manager